August 30, 2002

Jean D. Jewell
Commission Secretary
Idaho Public Utilities Commission
472 W Washington St
Boise, Idaho 83702

Cc: forwarded via email to Barton L Kline
Greg W Said
Idaho Power Company
to: bkline@idahopower.com
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Subject: In the matter of the filing by Idaho Power Company of its 2002 electric Integrated Resource Plan (IRP) - Case No. IPC-E-02-08

Dear Ms. Jewell and Commissioners:

Windland, Inc. has owned and operated utility-scale wind farms in California for the past 20 years and currently is proceeding with the development of a large wind farm in southeast Idaho. Windland staff have reviewed with great interest the 2002 Integrated Resource Plan (IRP) developed by Idaho Power Company.

Windland compliments Idaho Power for its June 28th iteration of the IRP. IPCo personnel responsible deserve commendation for what must have been a difficult assignment.

After extensively reviewing this IRP, Windland has several concerns and believes there are key deficiencies remaining in the plan that can, and should, be rectified before the plan is approved by the PUC. Windland respectfully submits the following comments:

1. **The levelized $/MWh costs of production IPCo calculates for wind generated electricity are grossly inconsistent with local market experience and inappropriate for making resource planning decisions.**

Windland recognizes the need to use some comprehensive and consistent method for estimating the costs associated with various generation alternatives. The use of AEO data provides a consistent basis for projecting costs for alternative generation sources. IPCo supplements this analysis with additional Idaho site specific cost estimates.

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While the data source may be consistent, both the generic and Idaho-specific estimate methodologies produce estimates of costs for wind projects that are grossly inconsistent with experience in the Northwest market. The IPCo study produces estimates of wind power costs of production in the $60-80 per MWh range when levelized over 30 years (see Figures 11 & 12). Recent experience in the Northwest has resulted in multiple contracts, amortizing capital costs over shorter durations, at closer to $40 per MWh. Based upon this information, IPCo's estimates overstate the cost of wind generation by 50-100%.

It is not clear from the information IPCo included in the IRP what causes this overestimate. Perhaps unrealistic assumptions as to capacity factors, tax benefits, scale economies, etc. were used in developing the cost estimates. Regardless of how IPCo comes to their wind cost estimates, Windland firmly believes there are multiple sites in the area (potentially including several in Idaho) where wind generated electricity could be produced at a cost lower than any of the fossil fueled alternatives listed in Figure 12.

2. **A proper analysis of rural economic benefits and societal costs would further improve the standing of wind generation relative to other generation alternatives.**

IPCo has added Table 5 in the June 28th IRP showing air pollution costs. The table lists estimated costs to society for each ton of three air pollutants released by fossil fuel powered generation resources.

What is not shown is how many tons of each air pollutant IPCo's reviewed fossil fuel powered resources would produce. To more accurately reflect the costs of the fossil fueled alternatives, Windland requests that the PUC direct IPCo add the cost of air pollution, using the range of per ton costs shown in Table 5, to the costs of the alternatives shown in Figures 11 & 12.

Windland also asks that the PUC note the significant rural economic development benefits associated with wind generation alternatives. Wind generation facilities are usually located in rural areas and have been shown to produce $2 of local benefits over the useful lives for each $1 originally invested in the facility. Meeting the majority of the expected load growth over the 10-year horizon addressed in the IRP would produce several hundred million dollars of economic benefits in rural portions of the Idaho Power service area. Windland believes that if IPCo were to appropriately estimate the costs and benefits of all alternative generation resources, Wind would be the clear winner over all fossil fueled alternatives.

3. **Meeting load growth through multiple, long-term, fixed price, competitively procured, power purchases would minimize risk to the ratepayers in the IPCo service area.**

While recession or the loss of large industrial customers may temporarily slow the pace, no one suggests the load will not grow in the IPCo service area over the long term. The rate of increase may vary, and even turn negative over short periods, but over a multi-year period loads will grow.

Due to the reliable expectation that loads would not fall over the medium and long term, IPCo ratepayers would not be subject to any risk from surplus generating capacity if IPCo were to make long term purchase commitments. Hence, as IPCo documents on page 26 of the June IRP, multiple interested parties (including the rate paying public, the PUC and the Legislature) have requested that IPCo move to lengthen the duration of its generation procurements, thereby reducing rate payer exposure to short term market price volatility.

The economic scale of fossil fueled plants tends to be equal to several years of IPCo projected load growth. In contrast, Wind generation facilities (often sized to produce 25 to 75 MW) approximate the average annual load growth projected in the IRP. If IPCo were to conduct multiple, competitive, long-term, fixed price procurements in amounts approximating short term load growth, IPCo ratepayers could be protected from both future price volatility and the expense of temporarily underutilized facilities.

During the IRP planning horizon, the cost per MWh actually purchased from the proposed Garnet facility (annual costs of both capacity and energy charges divided by the annual number of MWh purchased) is likely to greatly exceed the cost of similar purchases from other generation sources. Appropriately sized purchases of wind generated power insulate IPCo ratepayers from the costs of under utilized resources.

IPCo projects natural gas prices to decline (in inflation adjusted terms) over the time horizon covered by the IRP. By assuming fuel prices will fall in real terms, gas fueled facilities are projected to be cost effective. If IPCo is allowed to rely on these gas price assumptions and procure additional gas fired resources, and gas prices rise rather than fall (in real terms), IPCo ratepayers will be the losers.

As currently portrayed in Figures 11 & 12, the risk-adjusted costs of fossil fueled alternatives are understated by the magnitude of the un-hedged risk of future fuel price variability. Adding costs, to provide certainty to future gas prices (like the certainty currently available for future hydro and wind "fuel" prices), is necessary before a fair comparison can be made. Windland requests that the PUC direct IPCo's IRP be amended to include the cost to fully hedge all fuel price volatility in its 30 year levelized cost projections. Wind generation can offer known future costs. Not valuing the price

certainty wind provides biases the current analysis and will lead to sub-optimal resource planning decisions.

4. **Intermittency in wind generation poses operational challenges, but when measured over periods longer than a few months wind is a more "firm" resource than hydro. Adding wind resources to IPCo's generation portfolio offers better mitigation of hydro resource volatility than would be provided by adding more hydro resources.**

The intermittency of wind has often been incorrectly associated with a lack of predictability. When measured over a period of hours or days, wind generated electricity is more variable than river runoff. However, when measured on a seasonal or annual basis, wind is significantly more "firm" than hydro. Annual variations in streamflow are four or more times larger than the plus or minus 5% annual variability of annual wind energy.

The price impacts experienced by IPCo ratepayers, as a result of the company's need to buy power on the market during 2001, have brought comments from a variety of sources. On page 26 of the June IRP, IPCo explains that (in response to comments from the public, PUC and the Legislature) this planning document will reflect more conservative planning assumptions. In view of that, we can see that these more conservative assumptions are implemented by planning for 70th percentile water and load conditions. However, while comparing the effects of the load and water conditions one finds that the potential for a shortfall in supply (due to low water conditions) accounts for more than 75% of the combined effect of both conditions. Thus, the majority of the variability is due to hydro cycle rather than weather induced variations in load.

Although there is discussion related to demand side management, the primary method IPCo proposes for mitigating exposure to short-term market purchases in low water years is through adding generating capacity. One proposed method for adding capacity is to upgrade the hydro facility at Shoshone Falls. The Shoshone Falls upgrade is proposed as a run of the river facility. As such, it would not have a reservoir capacity to mitigate output variability during low water years. Windland contends that weighting the addition of hydro, as an offset to low water conditions at its long term average output of 30MW, overstates its potential contribution in such conditions and raises questions as to how much capacity it would supply in a low hydro year.

A study presented at the most recent American Wind Energy Conference displayed how hydro reserves could be reduced, and the time value of hydro generation increased, through proper integration of a wind and three dam hydro complex. (See "Reliance on Renewables – The Synergistic Relationship between Wind and Hydro Power" by

Kenneth J Westrick, Pascal Storck and Gerry Froese.) The potential to mitigate the effects of low stream-flow years, through the integration of Wind resources, should be addressed before it is decided to add more hydro resources to the IPCo portfolio. It is Windland's opinion that diversification of resource type is a more prudent portfolio approach than adding more of the same type of resource that produced the risk exposure in the first place.

5. **Discounting knowledge that was "Not Invented Here" (NIH) is an inappropriate management practice for a business operating in the competitive economy; therefore, such practices should not be tolerated in a business operating under public regulation.**

Explicit references (in the May draft) to IPCo's desire to implement a very small scale (1MW) "pilot project" have been removed from the June 28th IRP. However, the June version retains the ambiguous statement that IPCo "believes it would be prudent to pursue a pilot wind generation project" (IRP p 45). The IRP further states the cost and benefit data collected from this project would be analyzed prior to making a decision on expanded use of wind generated electricity in the IPCo resource portfolio.

Utility-scale wind generation is a well proven, fully operational technology. No utility needs to perform "pilot projects" to verify what is already well known. What IPCo characterizes as "prudent" corporate behavior, Windland sees (for reasons detailed below) as wasteful mismanagement. Windland believes the PUC would not sanction waste and delay.

Business management students know that during the 1980s American manufacturers faced substantial competitive pressures. Management responses early in the decade included studying the way Japanese manufacturing firms had implemented statistical process control techniques. Later in the decade, study of process knowledge was expanded to include "benchmarking" of superior process methods in all aspects of company operations. By the early 1990s, copying superior process methods of others had expanded to widespread acceptance of using "Best of Class" methods for reviewing all business processes.

In today's competitive marketplace, American firms have been forced by market pressure to abandon their reluctance to implement ideas that were "not invented here." Competitive firms use whatever knowledge and insight have been developed anywhere to move their performance toward the best in class. Firms failing to use "best in class" methods wherever possible either face dire prospects or (more likely) the managers may soon be looking for new employment opportunities.

In your capacity as "deputy" for competitive market forces, Windland asks that the PUC consider requiring a "Best in Class" approach in proposals, plans, and reports submitted to the PUC.

6. Conclusion

Windland believes that the June 28th IRP is the best document of its kind the company has produced. With attention to the issues addressed above, it can be used to make excellent resource planning decisions.

We thank the Commission for this opportunity to offer our comments and suggestions. If the PUC desires clarification of any of the matters detailed above, I and other members of my firm stand ready to assist you in whatever fashion you may require.

Sincerely,

Roald Doskeland
President